

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>2003P11480WO</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/013660</b>	International filing date (day/month/year) <b>01.12.2004</b>	Priority date (day/month/year) <b>11.12.2003</b>	
International Patent Classification (IPC) or national classification and IPC <b>F01 D25/08, F01 D5/28</b>			
Applicant <b>SIEMENS AKTIENGESELLSCHAFT</b>			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>7</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
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<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/EP2004/013660

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 

This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
 
  - international search (Rule 12.3 and 23.1(b))
  - publication of the international application (Rule 12.4)
  - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 

the international application as originally filed/furnished

the description:
 

pages 1-15 as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:
 

nos. \_\_\_\_\_ as originally filed/furnished

nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19 12.04.2005 with letter of 08.04.2005

nos.\* 1-30 received by this Authority on \_\_\_\_\_

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:
 

sheets 1/7-7/7 as originally filed/furnished

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
 

the description, pages \_\_\_\_\_

the claims, nos. \_\_\_\_\_

the drawings, sheets/figs \_\_\_\_\_

the sequence listing (*specify*): \_\_\_\_\_

any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 

the description, pages \_\_\_\_\_

the claims, nos. \_\_\_\_\_

the drawings, sheets/figs \_\_\_\_\_

the sequence listing (*specify*): \_\_\_\_\_

any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/EP2004/013660Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	1–30	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1–30	NO
Industrial applicability (IA)	Claims	1–30	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

1. This report makes reference to the following documents:

D1: US 2003/027012 A1 (WANG HONGYU ET AL) 6 February 2003

D2: US 5 740 515 A (BEELE WOLFRAM) 14 April 1998

D3: US 2003/008167 A1 (BARBEZAT GERARD ET AL) 9 January 2003

D4: WO 03/006883 A (SIEMENS AG) 23 January 2003

D5: US 5350599 A (RIGNEY DAVID V ET AL) 27 September 1994

2. The application does not meet the requirements of PCT Article 6, because claims 1, 11, 12 and 26–30 lack clarity.

2.1 According to claim 1, line 9, the component is used at use temperatures of up to a maximum of 850°C. The apparent further restriction in line 10 ("more particularly, up to a maximum of 650°C") serves to generalize the subject matter. Components that are suitable for longer periods of use at use temperatures of up to a maximum of 850°C are also suitable for use at use temperatures of

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

International application No.  
PCT/EP2004/013660

**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

650°C. Therefore, the scope of the subject matter for which protection is sought is not clearly defined.

2.2 Claims 11, 12 and 26-30, which are directed to a component, are defined in terms of the use of the component, for example in a steam turbine. These claims should have related either to a product in which the component is used (for example, a steam turbine) or to an activity (for example, a process or an application). See also the PCT Guidelines, 5.37.

In this report, these claims have been interpreted as products.

3. Irrespective of the above-mentioned lack of clarity, the subject matter of claim 1 also fails to involve an inventive step within the meaning of PCT Article 33(3), and therefore the requirements of PCT Article 33(1) have not been met.

3.1 The following indication of function does not enable a person skilled in the art to determine what technical features are necessary in order to carry out the function indicated: "for use in ... a longer period of use".

3.2 D1 discloses (the reference signs in parentheses refer to D1):

a component having a ceramic thermal

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

International application No.  
PCT/EP2004/013660

**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

insulating layer (claim 2) and having an erosion protection layer (22) on the thermal insulating layer (32), the thermal insulating layer being porous (paragraph [0021]).

3.3 Therefore, insofar as can be determined, the subject matter of claim 1 differs from the component known from D1 only in that a metal erosion protection layer is provided.

3.4 Consequently, the problem to be solved by the present invention can be regarded as that of providing an alternative to the erosion protection layer used in D1.

3.5 Metal erosion protection layers are, however, known from the prior art; see, for example, D2 (column 2, lines 16-21), D3 (table on page 2) and D4 (page 7, lines 14-27). Therefore a metal layer is only one of several obvious possibilities from which a person skilled in the art would choose according to the circumstances in order to solve the problem of interest, without thereby being inventive.

3.6 Therefore, the subject matter of claim 1 does not involve an inventive step.

4. Dependent claims 2-30 contain no features that, in combination with the features of any claim to which they refer, meet the PCT requirements for inventive step, since these additional features are already known from the prior art (see the documents

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

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PCT/EP2004/013660

**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

cited in the search report and the corresponding text passages) or since these features are of the kind that a person skilled in the art would use on the basis of familiar circumstances.

It should be noted that the embodiments described in claims 16 and 19 do not come under the present main claim 1 (for example, chrome carbide and tungsten carbide are not metallic).

These claims should have been defined as independent claims, or the main claim 1 should have been defined differently.

Furthermore, the additional features of claims 16 and 19 are known from D5 and therefore definitely do not involve an inventive step.

5. The invention is industrially applicable in the field of steam turbines (PCT Article 33(4)).